

What is claimed is:

- 1           1.       A machine-implemented method, comprising:  
2           monitoring execution progress of a parent task and one or more child tasks,  
3           wherein the one or more child tasks are spawned by the parent task and execute  
4           concurrently with the parent task; and  
5           determining an overall execution progress value for the parent task, wherein the  
6           overall execution progress value is determined based, at least partially, upon execution  
7           progress of the parent task and execution progress of at least one of the child tasks.
- 1           2.       The method of claim 1, wherein the parent task is a separate task from  
2           each of the child tasks.
- 1           3.       The method of claim 1, further comprising:  
2           causing an indication of the overall execution progress value to be displayed to a  
3           user.
- 1           4.       The method of claim 1, wherein weight represents an approximate amount  
2           of work that needs to be performed to complete a task, and wherein determining the  
3           overall execution progress value comprises:  
4           determining a total weight for the parent task, wherein the parent task has an  
5           associated weight and each child task has an associated declared weight, and wherein the  
6           total weight includes the weight of the parent task and the declared weight of each child  
7           task;

8 determining a ballast for the parent task, wherein the ballast is a portion of the  
9 weight of the parent task and indicates how much execution progress has been made by  
10 the parent task;

11 determining a calculated ballast for each child task, wherein the calculated ballast  
12 for a child task is a portion of the declared weight of the child task and indicates how  
13 much execution progress has been made by the child task; and

14 deriving the overall execution progress value for the parent task based, at least  
15 partially, upon the total weight, the ballast of the parent task, and the calculated ballast of  
16 at least one of the child tasks.

1 5. The method of claim 4, wherein deriving the overall execution progress  
2 value comprises:

3 determining a ratio between a total ballast and the total weight, wherein the total  
4 ballast includes the ballast of the parent task and the calculated ballast of each child task.

1 6. The method of claim 4, wherein determining a calculated ballast for each  
2 child task comprises:

3 determining a progress value for a particular child task; and

4 determining a calculated ballast for the particular child task, wherein the  
5 calculated ballast for the particular child task is the product of the progress value for the  
6 particular child task and a declared weight of the particular child task.

1           7.       The method of claim 6, wherein the particular child task spawns one or  
2   more grandchild tasks which run concurrently with the particular child task, and wherein  
3   the progress value for the particular child task is determined based, at least partially, upon  
4   execution progress of the particular child task and execution progress of at least one of  
5   the grandchild tasks.

1           8.       The method of claim 4, wherein the total weight does not include weights  
2   of any tasks spawned by the one or more child tasks.

1           9.       A machine-readable medium, comprising:  
2       instructions for causing one or more processors to monitor execution progress of a  
3   parent task and one or more child tasks, wherein the one or more child tasks are spawned  
4   by the parent task and execute concurrently with the parent task; and  
5       instructions for causing one or more processors to determine an overall execution  
6   progress value for the parent task, wherein the overall execution progress value is  
7   determined based, at least partially, upon execution progress of the parent task and  
8   execution progress of at least one of the child tasks.

1           10.      The machine-readable medium of claim 9, wherein the parent task is a  
2   separate task from each of the child tasks.

1           11.      The machine-readable medium of claim 9, further comprising:

instructions for causing one or more processors to cause an indication of the overall execution progress value to be displayed to a user.

12. The machine-readable medium of claim 9, wherein weight represents an approximate amount of work that needs to be performed to complete a task, and wherein the instructions for causing one or more processors to determine the overall execution progress value comprises:

instructions for causing one or more processors to determine a total weight for the parent task, wherein the parent task has an associated weight and each child task has an associated declared weight, and wherein the total weight includes the weight of the parent task and the declared weight of each child task;

instructions for causing one or more processors to determine a ballast for the parent task, wherein the ballast is a portion of the weight of the parent task and indicates how much execution progress has been made by the parent task;

instructions for causing one or more processors to determine a calculated ballast for each child task, wherein the calculated ballast for a child task is a portion of the declared weight of the child task and indicates how much execution progress has been made by the child task; and

instructions for causing one or more processors to derive the overall execution progress value for the parent task based, at least partially, upon the total weight, the ballast of the parent task, and the calculated ballast of at least one of the child tasks.

1           13.     The machine-readable medium of claim 12, wherein the instructions for  
2     causing one or more processors to derive the overall execution progress value comprises:  
3           instructions for causing one or more processors to determine a ratio between a  
4     total ballast and the total weight, wherein the total ballast includes the ballast of the  
5     parent task and the calculated ballast of each child task.

1           14.     The machine-readable medium of claim 12, wherein the instructions for  
2     causing one or more processors to determine a calculated ballast for each child task  
3     comprises:  
4           instructions for causing one or more processors to determine a progress value for a  
5     particular child task; and  
6           instructions for causing one or more processors to determine a calculated ballast  
7     for the particular child task, wherein the calculated ballast for the particular child task is  
8     the product of the progress value for the particular child task and a declared weight of the  
9     particular child task.

1           15.     The machine-readable medium of claim 14, wherein the particular child  
2     task spawns one or more grandchild tasks which run concurrently with the particular child  
3     task, and wherein the progress value for the particular child task is determined based, at  
4     least partially, upon execution progress of the particular child task and execution progress  
5     of at least one of the grandchild tasks.

1           16.     The machine-readable medium of claim 12, wherein the total weight does  
2     not include weights of any tasks spawned by the one or more child tasks.

1           17.     An apparatus, comprising:  
2             a mechanism for monitoring execution progress of a parent task and one or more  
3     child tasks, wherein the one or more child tasks are spawned by the parent task and  
4     execute concurrently with the parent task; and  
5             a mechanism for determining an overall execution progress value for the parent  
6     task, wherein the overall execution progress value is determined based, at least partially,  
7     upon execution progress of the parent task and execution progress of at least one of the  
8     child tasks.

1           18.     The apparatus of claim 17, wherein the parent task is a separate task from  
2     each of the child tasks.

1           19.     The apparatus of claim 17, further comprising:  
2             a mechanism for causing an indication of the overall execution progress value to  
3     be displayed to a user.

1           20.     The apparatus of claim 17, wherein weight represents an approximate  
2     amount of work that needs to be performed to complete a task, and wherein the  
3     mechanism for determining the overall execution progress value comprises:

4           a mechanism for determining a total weight for the parent task, wherein the parent  
5   task has an associated weight and each child task has an associated declared weight, and  
6   wherein the total weight includes the weight of the parent task and the declared weight of  
7   each child task;

8           a mechanism for determining a ballast for the parent task, wherein the ballast is a  
9   portion of the weight of the parent task and indicates how much execution progress has  
10   been made by the parent task;

11          a mechanism for determining a calculated ballast for each child task, wherein the  
12   calculated ballast for a child task is a portion of the declared weight of the child task and  
13   indicates how much execution progress has been made by the child task; and

14          a mechanism for deriving the overall execution progress value for the parent task  
15   based, at least partially, upon the total weight, the ballast of the parent task, and the  
16   calculated ballast of at least one of the child tasks.

1           21.    The apparatus of claim 20, wherein the mechanism for deriving the overall  
2   execution progress value comprises:

3           a mechanism for determining a ratio between a total ballast and the total weight,  
4   wherein the total ballast includes the ballast of the parent task and the calculated ballast  
5   of each child task.

1           22.    The apparatus of claim 20, wherein the mechanism for determining a  
2   calculated ballast for each child task comprises:

3           a mechanism for determining a progress value for a particular child task; and

4           a mechanism for determining a calculated ballast for the particular child task,  
5   wherein the calculated ballast for the particular child task is the product of the progress  
6   value for the particular child task and a declared weight of the particular child task.

1           23.    The apparatus of claim 22, wherein the particular child task spawns one or  
2   more grandchild tasks which run concurrently with the particular child task, and wherein  
3   the progress value for the particular child task is determined based, at least partially, upon  
4   execution progress of the particular child task and execution progress of at least one of  
5   the grandchild tasks.

1           24.    The apparatus of claim 20, wherein the total weight does not include  
2   weights of any tasks spawned by the one or more child tasks.

1           25.    A machine-implemented method, comprising:  
2           monitoring execution progress of a parent task and one or more descendant tasks,  
3   wherein each descendant task is spawned by either the parent task or another descendant  
4   task, and wherein the one or more descendant tasks execute concurrently with the parent  
5   task; and  
6           determining an overall execution progress value for the parent task, wherein the  
7   overall execution progress value is determined based, at least partially, upon execution  
8   progress of the parent task and execution progress of the descendant tasks.



1           26.     The method of claim 25, wherein the parent task spawns a child task and  
2     the child task spawns a grandchild task, and wherein determining the overall execution  
3     progress value for the parent task comprises:

4                 determining a progress value for the grandchild task;

5                 determining a progress value for the child task based, at least partially, on the  
6     progress value for the grandchild task; and

7                 determining the overall execution progress value for the parent task based, at least  
8     partially, on the progress value of the child task.

1           27.     The method of claim 25, wherein the parent task spawns a child task, the  
2     child task spawns a grandchild task, and the grandchild task spawn a great grandchild  
3     task, and wherein determining the overall execution progress value for the parent task  
4     comprises:

5                 determining a progress value for the great grandchild task;

6                 determining a progress value for the grandchild task based, at least partially, on  
7     the progress value for the great grandchild task;

8                 determining a progress value for the child task based, at least partially, on the  
9     progress value for the grandchild task; and

10                determining the overall execution progress value for the parent task based, at least  
11     partially, on the progress value of the child task.

1           28.     A machine-readable medium, comprising:

2 instructions for causing one or more processors to monitor execution progress of a  
3 parent task and one or more descendant tasks, wherein each descendant task is spawned  
4 by either the parent task or another descendant task, and wherein the one or more  
5 descendant tasks execute concurrently with the parent task; and  
6 instructions for causing one or more processors to determine an overall execution  
7 progress value for the parent task, wherein the overall execution progress value is  
8 determined based, at least partially, upon execution progress of the parent task and  
9 execution progress of the descendant tasks.

1 29. The machine-readable medium of claim 28, wherein the parent task  
2 spawns a child task and the child task spawns a grandchild task, and wherein the  
3 instructions for causing one or more processors to determine the overall execution  
4 progress value for the parent task comprises:  
5 instructions for causing one or more processors to determine a progress value for  
6 the grandchild task;  
7 instructions for causing one or more processors to determine a progress value for  
8 the child task based, at least partially, on the progress value for the grandchild task; and  
9 instructions for causing one or more processors to determine the overall execution  
10 progress value for the parent task based, at least partially, on the progress value of the  
11 child task.

1 30. The machine-readable medium of claim 28, wherein the parent task  
2 spawns a child task, the child task spawns a grandchild task, and the grandchild task

3 spawn a great grandchild task, and wherein the instructions for causing one or more  
4 processors to determine the overall execution progress value for the parent task  
5 comprises:  
6 instructions for causing one or more processors to determine a progress value for  
7 the great grandchild task;  
8 instructions for causing one or more processors to determine a progress value for  
9 the grandchild task based, at least partially, on the progress value for the great grandchild  
10 task;  
11 instructions for causing one or more processors to determine a progress value for  
12 the child task based, at least partially, on the progress value for the grandchild task; and  
13 instructions for causing one or more processors to determine the overall execution  
14 progress value for the parent task based, at least partially, on the progress value of the  
15 child task.

1 31. An apparatus, comprising:  
2 a mechanism for monitoring execution progress of a parent task and one or more  
3 descendant tasks, wherein each descendant task is spawned by either the parent task or  
4 another descendant task, and wherein the one or more descendant tasks execute  
5 concurrently with the parent task; and  
6 a mechanism for determining an overall execution progress value for the parent  
7 task, wherein the overall execution progress value is determined based, at least partially,  
8 upon execution progress of the parent task and execution progress of the descendant  
9 tasks.

1           32.     The apparatus of claim 31, wherein the parent task spawns a child task and  
2     the child task spawns a grandchild task, and wherein the mechanism for determining the  
3     overall execution progress value for the parent task comprises:

4           a mechanism for determining a progress value for the grandchild task;

5           a mechanism for determining a progress value for the child task based, at least  
6     partially, on the progress value for the grandchild task; and

7           a mechanism for determining the overall execution progress value for the parent  
8     task based, at least partially, on the progress value of the child task.

1           33.     The apparatus of claim 31, wherein the parent task spawns a child task, the  
2     child task spawns a grandchild task, and the grandchild task spawn a great grandchild  
3     task, and wherein the mechanism for determining the overall execution progress value for  
4     the parent task comprises:

5           a mechanism for determining a progress value for the great grandchild task;

6           a mechanism for determining a progress value for the grandchild task based, at  
7     least partially, on the progress value for the great grandchild task;

8           a mechanism for determining a progress value for the child task based, at least  
9     partially, on the progress value for the grandchild task; and

10          a mechanism for determining the overall execution progress value for the parent  
11     task based, at least partially, on the progress value of the child task.